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MAURITIUS

ANNUAL REPORT
ON THE
MEDICAL & HEALTH DEPARTMENT
1922

Report of Bacteriological
Laboratory Page 16

With the compliments of the Director of the Medical & Health Department, Mauritius, who will be pleased to receive a copy of your Annual Report in return.

COLONY OF MAURITIUS

ANNUAL REPORT

ON THE

MEDICAL & HEALTH DEPARTMENT

(1st January to 31st December 1922)

I.—POPULATION.

The estimated population of the Colony on 31st December, 1922, was ...	377,594
The estimated number of inhabitants on 31st December, 1921, was ...	376,314
Excess of births over deaths in 1922	988
Excess of arrivals over departures in 1922	292

The distribution of the population is shown in Annexure A.

MARRIAGES.

There were 1,884 marriages in 1922 and 2,351 in 1921, showing a decrease of 467. This is equivalent to a marriage rate of 5.9 per °/₀₀ (thousand) of population.

BIRTHS.

The total number of births for the year was 13,955 representing a decrease of 405 over the figure for 1921.

The birth rate was 37.0 per thousand against 38.1°/₀₀ the year before and an average of 36.2 for the five-year period 1918–1922.

The district birth rate and the five-year mean rates are as follows :—

District	1918	1919	1920	1921	1922	Mean °/₀₀
Port Louis	37.0	34.7	37.3	37.5	37.3	38.7
Pamplemousses ...	33.6	36.3	35.2	39.9	36.0	36.6
Rivière du Rempart	37.0	37.8	37.3	45.91	37.2	38.4
Flacq	32.8	33.3	33.9	37.1	32.7	34.3
Grand Port	36.6	35.8	34.9	32.9	35.8	35.4
Savanne	32.9	35.9	35.5	35.1	39.3	35.4
Plaines Wilhems ...	33.3	34.6	33.8	39.9	39.7	36.4
Moka	35.6	37.6	35.6	42.42	43.4	37.6
Black River	35,2	28.1	32.6	29.7	26.6	30.9
	34.2	35.2	35.1	38.1	37.0	36.2

It will be seen that Moka stands first on birth rate list while Black River comes last.

DEATHS AND DEATH RATES.

*These are crude death rates. During the year 1922 the total number of deaths was 12,967 *i.e.* 2,192 less than in 1921.

The death rate for the Colony was 34.5 per 1,000 compared with a death rate of 40.3 per 1,000 for 1921 and 42.0 per 1,000 for the preceding quinquennial period. The following statement shows the district death rates and the average rates for the five years 1918–1922.

District	1918	1919	1920	1921	1922	Mean °/₀₀
Port Louis...	50.4	126.9	47.3	53.2	42.6	67.0
Pamplemousses	40.8	70.5	32.5	40.9	39.0	50.8
Riv. du Rempart	27.0	46.5	23.1	35.5	37.3	33.3
Flacq	31.2	62.6	29.9	39.4	35.3	40.1
Grand Port	33.5	59.1	39.0	42.9	40.8	43.4
Savanne	28.4	49.5	34.7	42.4	29.4	36.6
Plaines Wilhems	29.8	47.9	25.2	30.5	23.8	31.5
Moka	27.6	55.8	27.0	40.9	32.1	35.7
Black River	40.1	74.4	40.9	41.8	35.2	47.2
	33.9	64.9	32.3	40.3	34.5	42.0

The highest death rate for 1922 is shown in Port Louis and the lowest in Plaines Wilhems. The number of deaths due to malaria and cachexia (highest death-producing factors in Mauritius) is 3,526 against 3,464 the year before. The proportion to total deaths is 27.2%. The next high causes of death are Pneumonia and Broncho-Pneumonia (1,538 in 1922 against 2,069 in 1921) and diseases of early infancy (1,002 in 1922 against 1,068 in 1921).

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* Crude Death Rates : Deaths irrespective of any consideration as to whether they are indigenous to the district or imported from another district.

With regard to the causation of deaths the following table supplies particulars :—

			Rate per °/oo
I	General Diseases	6,258	16.6
II.	Diseases of the nervous system and organs of the special sense	445	1.2
III.	Diseases of the circulatory system	275	0.7
IV.	Diseases of the respiratory system	2,228	5.9
V.	Diseases of the digestive system	1,020	2.7
VI.	Diseases of genito-urinary system and annexa (non-venereal)	526	1.4
VII.	The puerpural state	237	0.6
VIII.	Diseases of skin and cellular tissues	54	0.2
IX.	Diseases of bones and organs of locomotion	10	0.0
X.	Malformations	2	0.0
XI.	Diseases of early infancy	1,002	2.7
XII.	Old age	303	0.8
XIII.	Affections produced by external causes	147	0.4
XIV.	Ill-defined causes	460	1.3

The more notable causes of death were the following :

Malaria and Malarial Cachexia	3,526	Old Age and Debility	614
Pneumonia & Broncho-Pneumonia	1,538	Dysentery	496
Influenza	631	Debility—(over 1 year and under 70)	311
Diseases of early Infancy	1,002	Plague	75
Pulmonary Tuberculosis	958	Heart Disease	193
Diarrhœal Diseases	737	The Puerperal state	237
Bronchitis	551		

Death due to preventable diseases *i.e.* diseases due to faulty sanitary conditions, overcrowding, soil infection, defective or infective water supplies, amounted to 6,343.

This figure does not include infantile diarrhœa or infantile convulsions, both probably due to improper dieting, neglect and defective sanitary surroundings.

INFANTILE MORTALITY

By Infantile Mortality is meant the number of deaths occurring among infants under 1 year per each 1,000 births registered.

The Infantile Mortality Rate is a valuable index from the sanitary point of view and may be described as the index of Community Intelligence, for speaking generally it is found that the better educated and better housed sections of the community usually show lowest rates.

The mortality rate for 1922 was 147.9 (a reduction of 28.8 on 1921). In 1921 it was 179.7°/oo

No. of deaths due to Infantile Mortality.

During 1st week of life	491
During 1st month	1,277
During 1st year	2,065

The greatest cause of Infantile Mortality arose from congenital debility.

Having considered the Infantile Mortality Rate it is advisable to consider the question of still-births, the following were registered during 1922 :

Districts	Still-Births		Total
	M.	F.	
Port Louis	117	90	207
Pamplemousses	98	86	184
Rivière du Rempart	77	63	140
Flacq	156	110	226
Grand Port	127	112	239
Savanne	71	60	131
Plaines Wilhems	167	123	290
Moka	89	81	170
Black River	31	20	51
	933	745	1,678

Unfortunately registration of still-births is not compulsory and the total number of still-births in Mauritius probably greatly exceeds figures given above.

During the year, the Director made enquiries to elucidate, if possible, the causative factors, and although definite figures were not obtainable, yet the evidence clearly show that :

(1) Venereal disease (2) Congenital causes

accounted for the majority.

Owing to the early marriages amongst Indians and bearing of children at an immature age, as well as the hardship and privations amongst the lower classes, it was found that many children are born in a weak state. These causes in themselves are liable to cause death during the later months of gestation, and those children which survive till birth usually are weaklings and must tend to an early death.

Mortality in children from 1–5 years

	Males	Females	Total	Rate per °/oo.
From 1 year to 2 years	300	406	706	5.0
„ 2 „ 3 „	265	257	522	3.7
„ 3 „ 4 „	153	170	323	2.3
„ 4 „ 5 „	92	120	212	1.5

It will be noticed that the greatest mortality in 1-5 age period occurs in age period 1-2 years, and then from 2-3.

Enquiries show that it is the habit of mothers to go out to work during the day and the children are left to the care of young children who themselves have not reached the age of 7 years.

MIDWIFERY AND CHILD-WELFARE

During the year under review the question of proper training of Midwives was duly considered under the de Chazal Scheme. Up to date (20) twenty Midwives have been trained and placed on sugar estates, but the number is so few as compared with the needs of the population, and when it is considered, that, beyond Port Louis, no township possesses a qualified Midwife, it is a deplorable state of affairs.

A Midwifery and Child-Welfare Society was started under the direction of the Director, of Medical and Health Department. The ladies formed themselves into a Committee each representing the different areas. Monthly meetings were held and the question of milk supplies, creches, training Midwives and Health Visitors were discussed, and candidates for Pupil Midwives and Health Visitors who were to be trained in their respective duties were selected. They were examined by Drs. Rouget and de Chazal, but no funds being available the Pupil Midwives were cut down to 10 per annum and the Health Visitors were discarded. Lectures were delivered by Dr. Mac Neil (Lady Doctor in charge of Midwifery and Child-Welfare Scheme in Durban) and all sections of the population, press and planters welcomed the scheme.

Unfortunately the ladies got disheartened from want of financial support and the Society is at present dormant.

Dr. Balfour in his final report says " Government must however provide facilities for training, and instruction, and hence in the first instance expert help must be obtained from lands which have begun to put their houses in order. In my opinion an early appointment of a Woman Medical Officer specially trained in Midwifery and Child-Welfare work and 2 two Health Visitors must be made. The value that will be obtained by attending to the health and hygiene of expectant and nursing mothers in their own homes and under local conditions, and the proper control of infants will more than justify itself.

Intensive Educational Propaganda alone can overcome the delēterious influences that exist— Clinics must be started, but the main attack must be conducted in their homes against the conditions which produce the casualties. The sympathies and assistance of Medical and Nursing professions should be obtained.

That a great wastage of infant life which is preventable exists in Mauritius is undoubted."

During the year schemes were submitted :

(1) For the proper training of Midwives;
(2) Supervision and registration of Midwives;
(3) Midwives Act.

But after mature consideration it was found that the time was not ripe for legislation until sufficient Midwives had been trained and placed in different districts of the Island.

Creches.—The Infants' Creche at Port Louis (which is really of the nature of an Orphanage) has been well maintained during the year. Several improvements of structural nature were made. The most important was the mosquito proofing of all doors and buildings so that the infants are protected from mosquitoes, and flies, and at same time allow the windows to be opened day and night.

No. of children	64	No. of deaths	14

A daily creche was started under Immigration Department at Port Louis, so that provision was made for infants whose mothers were engaged in doing laundry work. This proved a great success.

The creche at Bon Secours Convent continues to do good work and the health of the children throughout the year was maintained.

On estates only one creche exists namely on Riche en Eau Estate, Grand Port, where the infants are taken and cared for during the day while their parents are at work. Over 30 infants are admitted and attended to daily and much good work is being done in this creche.

II.--PREVALENCE OF SICKNESS AND RECURRENCE OF PARTICULAR DISEASES

The following statement shows in a tabular form the number of cases treated in the public hospitals and at the dispensaries for the last five years :

	1918	1919	1920	1921	1922	Average
Hospital Admissions	22,845	26,820	22,132	19,127	19,337	22,052.2
Dispensaries Cases	57,025	78,546	65,302	60,671	85,638	69,436.4
Outdoor Cases	5,517	5,300	4,225	5,066	6,419	5,319.8
	85,387	110,666	91,659	84,864	111,466	96,808.4

These figures show an increase as regards hospital admissions and dispensary cases—as well as outdoor cases—for 1922 compared with 1921. The total number of cases is more than that for 1921 and for the five-year period 1918–22.

MALARIA AND HYPERTROPHY OF SPLEEN.

Malaria is not a notifiable disease in Mauritius, so the number of cases cannot be accurately given beyond admission for the illness to Hospitals and Dispensaries.

The total number of admissions for malaria was 2,762, an increase of 1,208 over the figure for 1921. The case mortality was 1.5% against 2.5% the previous year.

The death rate for malaria in hospitals per thousand of the population was 9.1 compared with 9.3 for 1921 and 9.4 for the five-year period 1918–22. The corresponding rates for deaths returned under Malaria and Malaria Cachexia were 9.3 for 1922, and 9.4 for 1921, and 9.5 for the quinquennial period.

The following statement shows the admissions for malaria and hypertrophy of spleen during the year under review :—

Institution	Malaria	Hypertrophy of spleen	Total
Civil Hospital	813	99	912
Port Louis Prison	13	1	14
Long Mountain Hospital	144	45	189
Poudre d'Or „	346	...	346
Flacq „	225	24	249
Mahebourg „	244	12	256
Souillac „	175	10	185
Barkly Asylum	146	10	156
Victoria Hospital	83	22	105
Lunatic Asylum	63	...	63
Beau Bassin Prison	140	6	146
Reformatory	32	...	32
Moka	103	6	109
	2,527	235	2,762

The return for the last ten years is as under :

1913	1914	1915	1916	1917	1918	1919	1920	1921	1922
2,546	2,935	3,728	2,905	2,939	3,262	3,390	2,699	1,554	2,762

In the public dispensaries a total of 30,897 cases of malaria were treated against 14,633 the year before. This shows an increase of 16,264 for the year 1922.

Five new dispensaries were opened during 1922 at Triolet, St. Julien, Quartier Militaire, Plaine Lauzun and Model Village, Cassis. The attendances were satisfactory and records were kept of all cases, so that increase in 1922 is more likely due to better check being kept than in former years rather than to increase in number of malarial cases.

SPLEEN CENSUS

A spleen census of the children attending school was taken twice during the year 1922. This enumeration by Medical Officers of enlarged spleen among children, in the several districts of the Island, is regarded as a fairly reliable index of the degree of prevalence of malaria in a locality, and is specially useful for purposes of comparison. The results obtained were on the whole satisfactory. The percentage being 15.8% out of 14,659 children examined.

The following statement gives the spleen rates for the last five years :—

SPLEEN RATES

Districts	1918	1919	1920	1921	1922
Port Louis	22.0	18.8	20.1	13.9	20.8
Pamplemousses	16.8	15.3	15.8	8.3	12.8
Rivière du Rempart	10.6	10.8	11.05	8.2	14.2
Flacq	19.1	17.08	19.1	13.7	21.3
Grand Port	14.2	10.8	16.4	...	...
Savanne	15.5	10.07	17.4	...	...
Black River	31.1	35.6	39.4	40.1	...
Plaine Wilhems	1.8	2.3	2.8	...	...
Moka	4.8	40.4	4.2	2.2	4.6
	13.2	10.9	13.4	10.0	15.8

As regards Spleen Census these figures can only be regarded as approximate. I have excluded Grand Port, Savanne and Plaines Wilhems as the School Medical Officer failed to make examinations.

Examination of Malaria bloods in School Children.—During the year a trained microscopist visited the schools in Port Louis and commenced a routine of blood examinations for *malaria parasites*. This is being continued in every school where malaria exists but the figures received on 31st December do not warrant any definite results. The question will be discussed in next Annual Report.

Malaria.—Dr. Malcolm Mc Gregor, the eminent Biologist, spent eight months in Mauritius in 1922 primarily to investigate the Bionomics of Anopheles Costalis and principally in this connection to determine how :

(1) The species passed the winter months. Whether as hibernating adult females or as larvae.

(2) To investigate the winter distribution of this species and to determine whether it was actually confined to the Coastal Belt during the winter, or, if it occurred inland during these months, as well, and to any extent.

The results published in his interim report are as follows :—

1. Costalis does *not hibernate* in Coastal Areas.

2. 1,200 feet altitude was found to be the most inland breeding place of Costalis during winter months on northern slopes of Mauritius. Here active life and reproduction proceeded, and it was found that the speed of the life process was somewhat reduced owing to lower temperature.

3. From Solphano Areas (highest plane) no further Anopheles breeding places occurred and they were only found on descending towards coast on South Side of Island near Wireless Station at 1,200 feet above sea level. So, after full investigation, it was decided that no hibernation takes place in Coastal Regions and that the species, in its highest inland breeding places, maintains active life.

4. Anopheles Costalis in Mauritius in region of Coastal Belt, survive the winter, not by hibernating but by adoption of sheltered winter refuges, where they pursue the regular course of their lives, restricted to these refuges until the onset of warmer weather and commencing wet season. They spread further inland to the widest extent of their summer distribution.

The following mosquitoes were found to transmit malaria :

(a) *Anopheles Maculipalpis*—Which occurs extensively in Port Louis and which also has wide distribution along Coastal Belt below altitude of 500 ft. Large numbers of them were found on Eastern slope of Corps de Gardes.

(b) *Anopheles Funestus*—Is common in Coastal Areas. The highest altitude where found was 500 ft. and it is found in natural waters requiring some shade.

(c) *Anopheles Costalis.*—Is chief agent for malaria in Mauritius.

Anti-Malarial Works.—During the year 1922 the following anti-malarial works were performed in the Island.

A.—Minor Works.

(1) *Maintenance.*—1,474.094 feet or 279.2 miles of streams and drains were upkept i.e. kept constantly clean and free from mosquito larvae.

(2) *Repairs.*—844,112 feet or 159.5 miles of streams and drains silted with stones and earth or otherwise damaged by floods, were cleared out and repaired during and after the rain season.

(3) *Marshy land.*—25,331 sq. yards or 5.7 " arpents " of marshy land were cleared of bulrushes and other aquatic vegetation.

(4) *Neutral Zone.*—Around Port Louis, 87,583 square yards or 19.7 " arpents " of land were cleared of cactus and other various plants,—in Pitot Valley.

(5) *Filling up.*—Quarry pits and weedy pools and ponds containing stagnant water were filled up to the extent of 12,478 cubic yards.

(6) *Grass Planting* :—2,182 sq. yards of filled former beds of streams were planted with grass to prevent erosion, and the formation of pools liable to breed mosquitoes.

(7) *Petrolisation.*—The numerous large marshes between Mont Choisi and Grand Gaube in the Districts of Pamplemousses and Rivière du Rempart were regularly petrolized to keep down mosquito breeding.

(8) *Mosquito breeding places.*—8 well trained moustiquiers were employed in searching for mosquito breeding places all over the Island and in destroying them.

(9) *Foot-paths.*—500 feet of foot-paths were made along the banks of streams to facilitate control.

B.—Major Works.

(1) *Drains.*—23,234 feet of drains were cut to drain marshes and seepage water.

Works in Port Louis.—(1) Partial clearing of Pouce and La Paix Valleys for the creation of a half-mile zone around the town.

(2) " Prise " cocks were removed and ferrule taps were substituted in 807 regards.

(3) About 17,000 sq. yards of marsh land at Les Salines and areas of about 1,000 sq. yards at corner of Fanfaron Marsh and Abattoir Road in the intra urban area were reclaimed by the Medical and Health Department.

(4) Regular petrolising of all marshes and pools likely to breed mosquitoes.

Pneumonia.—In the whole Colony the total number of deaths is 1,318 against 1,875 in 1921 and 1,198 for the five-year period 1917-21.

The high mortality recorded in 1921 pointed to a severe prevalence of the disease.

The admissions into hospitals were 331 with 109 deaths against 323 with 112 deaths the year before, the mean figure for the preceding five years being 290.

Influenza.—In the whole Colony the deaths stand at 631, that is 932 less than the figure for 1921. The mean for the preceding 5 years being 2,264 (period 1917-21).

The hospital returns shows 1,596 admissions with 51 deaths giving a case mortality of 3.2% against 5.9% in 1921.

For the period 1917-21 the hospital admissions were 2,600 on an average, while the figure for 1921 is 2,475.

Bronchitis.—The total deaths recorded in the Colony amounted to 551 against 753 in 1921 and 734 for the five-year period 1917-21.

In this case the hospital admissions show an increase in the figures (1,052 against 826 in 1921) The hospital death rate was 3.5% against 2.7% the year before.

DYSENTERY.—Not notifiable.—The mortality for dysentery in the whole Colony was 496 i.e., 1 less than the year before, the quinquennial figure being 730.

The hospital admissions show 452 in 1922 against 412 in 1921, and 707 for the five-year period 1917-21.

In the dispensaries, however, 1,934 cases were registered against 1,264 the previous year and 1,340 for the past five years. Unfortunately no microscopical examination was made to confirm the nature of disease.

ENTERIC FEVER.—In the whole Island 224 cases were registered against 288 in 1921, the highest figures being furnished by Port Louis, Plaines Wilhems and Moka.

74 cases were admitted for treatment in hospital, 6 less than in previous year. The deaths numbered 20, giving mortality rate of 27%.

The following table shows the seasonal prevalence of the disease in each of the districts:—

District	Jan.	Feb.	Mch.	April	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.	Total	
													1922	1921
Port Louis ...	...	7	13	19	26	19	14	3	3	1	...	1	106	34
Pamplemousses...	..	...	...	2	...	...	...	...	...	...	...	...	2	6
Riv. du Rempart	...	...		...	1	...	...	...	1	1	1	...	4	11
Flacq	...	...	3	...	...	...	...	1	...	1	...	...	5	10
Grand Port ...	2	...	1	1	1	2	...	...	...	...	5	2	14	28
Savanne ...	3	2	3	1	6	...	1	..	...	1	...	1	18	40
Black River ...	...	...	1	..	...	...	...	...	...	...	...	...	1	1
Plaines Wilhems	4	7	10	3	1	5	3	3	1	4	5	2	48	132
Moka	5	4	1	...	...	...	...	1	2	3	5	3	26	26
TOTAL ...	14	20	32	26	36	26	18	8	8	11	16	9	224	288

The figures for the past 10 years are as follows:—

1913	1914	1915	1916	1917	1918	1919	1920	1921	1922
172	234	188	227	244	169	190	168	288	224

As regards Port Louis, the epidemic started in February when 7 cases were notified, 13 in March, 19 in April, 25 from 1st to 26th May.

I investigated every case which was notified as regards water and milk supplies, fly contamination, carriers, badly performed night soil work, and other possible sources *i.e.* inspection of aerated water factories, food and markets &c. The difficulties experienced by my Department have been accentuated by the fact that, Medical Practitioners, in many cases, do not notify the disease until the patient has either recovered or died, and then only for purposes of having the premises disinfected.

I have had cases averaging from 40 to 60 days from onset of illness before notification has been received.

It will be therefore easily understood that cases of enteric fever occurring in slums,densely populated, often without proper latrine accomodation, or supervision, and oftener, where latrines are badly constructed, and pails defective and where the night soil service is badly performed, and owing to present system of dealing with "Engrais," where these discharges are returned to the fields in less than six weeks, so that such late notification and existing conditions prevent the Medical and Health Department from combating the disease in a prompt manner.

Investigations, bacteriological and chemical, of water supply showed that the supply from Grand River was grossly polluted and investigations along the whole route convinced me that the causative agent was impure water; so notices were published through the press (all newpapers) of the danger of drinking unboiled water.

The Milk Supplies were carefully investigated and daily visits were made to all milk purveyors and sellers at their homes to trace and report any case of illness.

That flies may play an important part I feel confident. This point was brought forward by Drs. Rouget and Celestins at a recent meeting of the Medical Society. The condition of latrines already mentioned, allows flies to travel from these places and carry the poison to foodstuffs.

Dr. Balfour has pointed out in his Report on Port Louis, that the water from Grand River is grossly polluted and as this is the main source of supply, active steps were taken to ascertain the condition of water from February to May, and both chemical and bacteriological analyses showed that the water was quite unfit and unsafe.

Spot Maps all cases of enteric fever relative to water supplies proved this clearly and effectively and further that the water supply before reaching the Municipal Reservoir and direct from pipe showed the greatest incidence.

At a meeting of the Medical Society of Mauritius I discussed fully the whole question, its causes, progress, difficulties and asked for further co-operation.

The meeting was a happy one and full assistance was promised and they were glad that the Medical Department has consulted and discussed the matter with them; so it augures well for the future.

I pointed out the difficulties and almost impossible task laid on the Medical Department by delayed notification. Most of the replies were selfish ones, and too absurd and which could not and would not be tolerated in any other country, namely:

(i) Susceptibility of patients, feelings, although the dangers to other members of the population are understood. After full discussion I agree, to suspend the usual daily visit of a Sanitary Inspector.

(ii) The system existing in Mauritius of calling in a Medical man once, then waiting 2 or 3 days and if the patient does not get better, another Medical man is called in.

There may be something in that but I cannot conceive any Medical Man failing to diagnose the typhoïd state or enquire how long the patient has been ill without asking the name of previous Medical Man or even looking at stools where there is a history of diarrhœa.

I have asked Medical Men to notify every suspicious case, then we can visit and carry out the usual sanitary precautions, and to obviate any doubt I have arranged to keep in Port Louis the necessary utensils for Blood Counts and Widal Tests—the two real proofs as to whether a patient has enteric fever or not.

These tests were done at Réduit Laboratory, but as soon as a Laboratory is provided for the M.O.H. Port Louis, it will be easily carried out without loss of time. These tests will be free to all.

Arrangements were made to supply special metal pails painted red to receive the discharge from persons suffering from enteric, the contents of which to receive thorough disinfection.

So far I have been unable to trace any carrier in this epidemic.

A scheme to chlorinate the Grand River N.W. water was submitted and approved.

A sufficient supply of T.A.B. Vaccine has been obtained by the Medical and Health Department and a prophylactic campaign will be undertaken.

LEPROSY.—The number of inmates at St. Lazare Leper Asylum on 1st January was 37 (Males 24, Females 13).

There were 12 admissions during the year (19 males and 2 females), 6 deaths and 7 discharges. There remain 36 lepers at the end of the year (24 men and 12 women).

Of the twelve admissions, eight were new cases. They were in the following stages of the disease: Tubercular 4, Anaesthetic 4. The new admissions came from: Rivière du Rempart 1, Beau Bassin 1, Port Louis 3, Flacq 2 and Mahebourg 1.

Leprosy in Mauritius is not classified as an infectious disease and therefore not notifiable, but that the disease is common in the Island is undoubted. Every day cases are met with in the streets of Port Louis and in various villages. No restriction is made except as regards mendicant and criminal lepers.

There is no law compelling segregation of lepers. They wander about at liberty living with their families and transmitting the disease. There is nothing to prevent marriages between lepers; hence the hereditary taint continues.

That leprosy is a contagious disease is certain, and, I strongly urge that leprosy be made notifiable and now that the Powder Mill Leper Hospital is completed every inducement should be made to get all pauper lepers who are receiving Government relief to enter that institution, and if necessary to compel them to do so, and supervision of contact of well known lepers should be provided for.

Treatment.—During the year patients have been classified and photos taken, injections of ethylesters of the Chaulmoogra oil have been given. Dr. David and I are interesting ourselves in the matter, but it is still too early to state definitely the results of the treatment.

PLAGUE.—That plague is a disease endemic to Mauritius is easily shown by going over the available statistics since 1889. The figures are:—

1899	919 cases	1906	403 cases	1913	194 casee
1900	733 „	1907	126 „	1914	72 „
1901	815 „	1908	138 „	During War Period	No official records available
1902	337 „	1909	250 „		
1903	978 „	1910	376 „		
1904	354 „	1911	61 „	1921	375 cases
1905	202 „	1912	445 „	1922	98 „

I annex statements showing the number of plague cases in the Colony during the year 1922, their classification according to place of treatment, race, sex and age incidence and the number of rodents caught in Port Louis and Country districts (Annexures B., C., AND D.).

The total number of Rats caught in Port Louis was	57,554
„ „ „ Rural districts „	29,831
Total	87,385

The cost of the Rat Campaign works out @ 60 cents per rat caught.

During January there were 26 cases of plague and in February 3 cases; these may be regarded as terminal cases from 1921. From February 1922 to August no plague was reported. Rat-catching was persevered with throughout the year, and every rat caught, killed, or found dead was examined bacteriologically and no plague bacilli were found from 13.2.22 to 30.7.22.

Treatment of plague cases.—In order to arrive at some conclusion as to the relative value of drugs in plague, Electroargol, Iodine, Yersin's serum and a curative vaccine diluted down and made by Dr. Barbeau from Clinsearch Prophylactic Vaccine formed the treatment of plague. The cases were not selected for treatment, but given according to bed occupied. The conclusions were incomplete but we were convinced that success depends on early notification and the conclusions pointed to Iodine given intravenously as the most successful.

During the year all grain stores were fumigated each week, experiments were made to find out if mongooses were vectors of the disease but so far no positive evidence was obtained.

Failure to eradicate plague and incomplete success of the rat campaign are due, in my opinion to:—

(1) Old dilapidated buildings, out of repair, mostly old wooden buildings with double walls connected with cellars and old drains.

(2) Overcrowding and mode of living of general mass of population.

(3) Lack of provision amongst the poor for keeping food.

(4) Grain stores. There are no rat-proof premises. Every Chinaman's house is a grain store. Rice, grain and gunny bags are stored all over the town.

(5) Ignorance of population and reluctance to report cases of plague especially in country districts where huts were burnt, although compensation is paid in each case.

Remedies suggested :—

(1) *Educational Propaganda.*—Public lectures were given by Director and articles distributed to the press which kindly assisted in the campaign. I suggest that the Government of Mauritius should obtain the Cinema Film entitled "The Rat Menace" and show it free of charge to all school children and I think that much good would occur.

(2) *Better Housing.*—The work done during the year is dealt with in the report of the M.O.H. Port Louis.

(3) *Rat Proof Granaries.*—Suitable premises were visited by His Honour the Officer Administering the Government, the Assistant Director Public Works Department., the Director, Medical and Health Department and the Hon. J. Brodie, and it was finally decided that Government should take over the Arabian Dock buildings and make it rat-proof. As this building comes in for purchase in Mr. Mitchell's Harbour Report, it is hoped that Government will use every endeavour to utilise these buildings for this purpose.

I would like to express my thanks to the Hon. J. Brodie for the trouble he took to assist this department in this matter. His local knowledge and keenness were of great value.

Method of treating contacts.—(1) Disinfection :—All premises both of patients and contacts were claytonised.

(2) Rags burnt.

(3) Patients as well as contracts were isolated.

(4) Contacts were deloused and bathed.

(5) Inoculation by prophylactic vaccine.

The outbreak during the latter portion of the year was entirely confined to Port Louis and is dealt with by M.O.H. Port Louis in his Report.

Prophylaxis.—As soon as plague appeared in August an active compaign was started in each school. Lectures were given to parents and children, great assistance was given by the Hon. J. Tranquille and Councillor Poupard, and loyal co-operation was given by parents and children. I started inoculating with Clinsearch Prophylatic Vaccine in August and September and the work was continued by M.O.H. Port Louis on his arrival until every school in Port Louis was done. No pressure was used. The results were satisfactory and encouraging. They are dealt with in M.O.H. Port Louis Report.

DIPHTHERIA.—In the whole Colony 25 cases were notified of which 1 (in hospital) proved fatal.

Loefeller's Diphteria Bacillus was found in 21 cases in association with Vincent's bacillus in 7 instances.

MEASLES.—Nil.

SCARLET FEVER.—Nil.

CANCER OR MALIGNANT DISEASE.—41 cases admitted into hospital with 11 deaths.

Age periods at death

Under 1 year	5–10		10–20		20–30		30–40		40–50		50–60		60–70 and over	
	M	F	M	F	M	F	M	F	M	F	M	F	M	F
...	...	.	...	1	1	1	1	1	...	1	1	1	1	...
...	...	...	...	...	...	...	...	...	...	1	1	...	...	...

DIARRHŒAL DISEASES.—These comprise diarrhœa and enteritis. In the whole Colony 757 deaths occurred, representing a death rate of 1,9 per $^{o}/_{oo}$ of population.

In the hospitals 641 cases were admitted, resulting in 81 deaths, the case mortality was 12.6%.

HEART DISEASES.—These heart affections include organic diseases of the heart, pericarditis, endocarditis, valvular disease and hypertrophy.

In the whole Colony the organic diseases of the heart numbered 193. The number of cases admitted into hospital was 54 with 6 deaths.

VENEREAL DISEASES.—There is a fall in the number of cases attending hospital, in 1922 the figures being 264 against 320 in 1921. Outdoor cases were also less numerous : 247 against 273 the year before. Primary infection was diagnosed in 189 of the hospital cases and 61 of the outdoor cases.

During 1922 the Government sanctioned the expenses of classes of instruction in Venereal Diseases by Dr. Edgar Laurent during his vacation in London and Dr. Balfour kindly assisted in arranging matters. Dr. Laurent will be responsible, on his return, for the Venereal Clinic which will be opened in Port Louis as soon as he arrives. It is proposed to bring Venereal Disease under the new Health Ordinance and a scheme including the following main services will be included therein viz., :

(1) Provision of facilities for diagnosis.

(2) Arrangements for treatment.

(3) Provision of approved Arsenobenzol Compounds and treatment centres.

(4) *Propaganda work.*—In my opinion Venereal Disease is extremely prevalent all over the Island. Most cases are concealed and only cases which incapacitate workers are referred to hospitals.

NOTIFIABLE INFECTIOUS DISEASES

Ordinance No. 47 of 1878 provides for the compulsory notification of Plague, Cholera, Choleraic Diarrhœa, Small-Pox, Yellow Fever, Diphtheria and Membranous Croup, Measles, Scarlatina or Scarlet Fever, and the fevers known by any of the following names: Typhoid or Enteric, Typhus, Relapsing, Continued and Puerperal Fever and also Cerebro-Spinal Meningitis (Government Notice No. 65 of 1908).

The cases notified to the Sanitary Authorities were as follows :

Plague ...	98 cases	Tetanus ..	1 case	Diphtheria	25 cases
Typhoïd Fever	224 ,,	Continued Fever	1 ,,	Chicken Pox	2 ,,
Erysipelas ...	20 ,,	Puerperal Fever	21 cases	Meningitis (Cerebro-Spinal)	1 ,,

There is no compulsory notification of tuberculosis in this Colony, although it has been adopted in other places. The question is no doubt a complex one and deserves serious consideration. Though tuberculosis is not notifiable at present, this is being altered under the New Health Ordinance.

Dysentery, too, has some time past been engaging the attention of sanitarians, as being deserving of classification as a notifiable disease. The matter has been taken in hand here, and is receiving consideration.

PULMONARY TUBERCULOSIS.—Hospital admissions indicate a fall under this head, 444 in 1922 against 577 in 1921. The case mortality was 24.3% against 23.8% the year before.

The mortality from tuberculosis in the whole Colony was 958 against 945 in 1921 and 970 for the five-year period 1917–1921.

During 1922 the new Tuberculosis Ward at the Civil Hospital containing 20 beds was opened. Unfortunately the Tuberculosis Dispensary advocated by Dr. Balfour was not sanctioned, it being decided to fill the ward with cases of tuberculosis from all parts of the Island, with the result that the object it was built for was defeated, partly because the climate of Port Louis during the summer months is not suitable for tubercular cases, but chiefly because the relatives of sufferers could not afford to go to Port Louis to visit the sick there.

That it is necessary to have some place in which cases of tuberculosis, diagnosed in the early stages, can be sent for treatment and also a place where advanced cases constituting a danger to the rest of the community can be sent in order to prevent the spread of the disease. A Tuberculosis Bureau, by itself, where the disease is only diagnosed, will do little good in preventing the spread of the disease. Therefore I recommend that one room be used as a Head Bureau and that the remainder of the large building be utilised for treating the disease. As soon as Pulmonary Tuberculosis becomes notifiable it will be the duties of M.O Hs. and Sanitary Wardens to investigate the incidence of tuberculosis in their districts, the home conditions, and to take all steps necessary for preventing the spread of infection.

The following statement shows the classification of deaths from tubercular diseases for the last 5 years :

Deaths due to :	1918	1919	1920	1921	1922	Average for 5 years
Pulmonary Tuberculosis and Phthisis	980	1,065	1,005	1,010	1,076	1,027
All forms of Tuberculosis ...	1,107	1,104	1,030	1,035	1,083	1,071

BERI-BERI.—(Not notifiable) In the whole Colony 17 deaths were registered against 71 the year before.

The hospital returns show 85 admissions with 13 deaths.

This represents a decrease over the figure (230) for 1921.

ANKYLOSTOMIASIS

The campaign opened on 16th May on arrival of Dr. Hampton, the representative of the International Health Board.

Owing to lack of proper Soil Sanitation Campaign, the work was confined to the Schools in and around Port Louis and to the Prisons at Port Louis and Beau Bassin.

Much propoganda work of an educational nature was accomplished, 49 public lectures as well as conferences were held during 1922.

12,643 persons were examined and treated for Hookworm. Literature was widely distributed including 325 letters, 9,000 pamphlets and 1,688 notices.

Moka District was selected as the area for Treatment Campaign.

After investigation as to the best means and type of closet most likely to be suitable for the population, Pit Latrines were adopted, where possible, the Government supplying concrete slabs for same.

Up to end of December 500 pits had been dug.

It is unfortunate that, owing to lack of Soil Sanitation in the district selected, the best results were not obtained. Yet this campaign has done good work from an educational point of view and in stimulating the construction of latrines in rural districts.

For the whole Colony 56 deaths from Ankylostomias were registered against 34 the year before, and an average of 21 for the five year period 1917–21.

There were 511 admissions into hospitals with 11 deaths.

CEREBRO-SPINAL MENINGITIS.—One case notified throughout the Colony and the case occurred in Moka Hospital, but recovered.

ERYSIPELAS.—20 cases were notified with 17 deaths. Hospital admissions numbered 20 with 6 deaths.

SMALL-POX AND STATE OF VACCINATION.—There has been no small-pox in the island since 1913 A total of 10,140 children were vaccinated during the year and 9,903 successes were obtained in the operation, In 23 cases the results could not be ascertained. The proportion of vaccinated children to total births is $72.60\,{}^{\circ}/_{\circ\circ}$. The danger of an unvaccinated population is not realized until an epidemic of small-pox occurs.

PURPERAL SEPTICAEMIA.—In the whole Colony 237 women died in consequence of the puerperal state. 11 cases received treatment in hospitals, 4 of these died, a proportion of 36%.

As there were 13,955 births in 1922 the mortality among women in childbirth per thousand live births is 16.9%, a very high figure, and from investigations I am convinced that the statistics of deaths connected with pyæmic and septicæmic conditions associated with puerperal period are incomplete and if all deaths were recorded from this cause a much higher figure would be shown.

ITCH (SCABIES).—349 admissions into hospital.

MENTAL DISEASES.—The total number of persons certified insane on 31st December 1922 was 742*; 31 less than the year before. This represents a ratio of insane to total population of 1 in 510 or 1.959 per 10,000.

The admissions into the Lunatic Asylum numbered 175. They are classified into: first admissions 89, second admissions 8, readmission from probation 31, readmission from Barkly Asylum Lunatic Branch Wards and Victoria Hospital 21, and 25 admitted on interim order, but found not insane after examination by Commissioners in Lunacy, and one released by order of District Magistrate on application of relatives.

The causes of insanity are reported as being due to mental worry, hysteria, malarial fever, grief, heredity, alcoholism, epilepsy, syphilis and gandia smoking.

The largest number of admissions came from Plaines Wilhems 41 and Port Louis 29. The daily average of patients in the Asylum was 495.96 and 77.60 in the Branch Wards.

The Criminal Lunatics on 1st January 1922 numbered 17 (15 males and 2 females). There were 4 admissions, 5 discharges and 1 death.

At 31st December 1922 there were in Asylum 15 (13 men and 2 women). The total number of discharges was 137 (83 males and 54 females) classified as follows: Number found not insane 23; number relieved and released on probation 89; released by order of Judge in Supreme Court 1; released by order of District Magistrate 1, found cured and discharged 2; number transferred to branch wards Barkly Asylum 20; to Victoria Hospital 1.

Among the patients at the Lunatic Branch Wards, 9 harmless imbeciles were allowed to leave the Asylum on probation under the care of relatives and friends.

Among the patients outside the Asylum on probation, 71 (42 males and 29 females) were found cured and given a final discharge.

There were 29 deaths in the Asylum, 7 more than in 1921. The death rate was 5.84 % against 4.68 % in 1921 and 6.29 % in 1920, the death rates for 1919, 1918 and 1917 were 11.90 % 8.71 % and 6.00 % respectively.

The number of inmates left on 31st December 1922 was 486 (250 males and 236 females) at the Lunatic Asylum and 74 (47 males and 27 females) in the Lunatic Branch Wards.

Improvements made to the building of the Lunatic Asylum during the year 1922:

(1) The bathrooms (one in Male and one in Female Dept.) were built.
(2) New shingles were placed on roofs of water closets of Female Dept. wards 2 and 3.
(3) Roofs of Male and Female Cells were covered with galvanized iron sheets.
(4) Seven windows of the Male Dept. ward 2 were provided with mosquito-proof wire netting.

PORT AND QUARANTINE WORK

226 vessels called at the Port of Port Louis in 1922. They were 183 steamers and 43 sailing crafts. The British steamers and sailing crafts numbered 129 and 39 respectively, while the foreign steamers and sailing crafts were 54 and 4 respectively. The crew in steamers (British and Foreign) amounted to 13,083 and that in sailing crafts British and Foreign was 625.

The number of passengers examined in steamers was 4,282 and the passengers examined in sailing craft numbered 310. Pratique was immediately given to 188 ships on their arrival, while 35 vessels were only admitted to pratique after disinfection, fumigation and claytonisation of cargo, as they came from infected ports. Three vessels were refused pratique and took their coal in strict quarantine; the 17 outgoing vessels were claytonised owing to the prevalence of plague in the Island.

The revenue accruing to the Department in connection with the claytonisation of ships amounted to Rs. 5,065; and Rs. 44.96 were realised from operations performed at the Harbour Disinfecting Stations.

No case of contagious or infectious disease was detected on board during the whole year.

HOSPITALS AND ASYLUMS

During the year Victoria Hospital was opened with Dr. de Chazal as Superintendent, and Dr. de Chaumont as Resident Medical Officer, and Miss Humphreys as Matron.

It has a capacity to accomodate 400 patients and when properly equipped should do good work.

Annexure F. gives a summary of the work done in the hospitals and asylums of the Colony during the year 1922.

III.—SANITARY CONDITION OF THE ISLAND

RURAL DISTRICTS

In the several sanitary sections of the rural districts, the number of contraventions detected by the Sanitary Officers amounted to 3,775 giving rise to 991 prosecutions with a total of Rs. 11,556.25 recovered as fines.

15,491 notices, orders and requests were served under the several Sanitary Ordinances and Regulations. Of these, 2,345 were not complied with and resulted in 2,200 prosecutions with aggregate fines of Rs. 6,780.75.

The revenue derived from fees collected in Cemeteries, Markets and Abattoirs were Rs. 20,361.25 Rs. 1,629.65 and Rs 22,695 respectively, and the annexed statement shows the number of cattle slaughtered in the several abattoirs of the Colony. (Annexure G).

The Government and State-Aided Schools were each visited twice during the year.

Almost all these school buildings, with very few exceptions, were not constructed to serve the purposes for which they are being used. The latrines are being improved but are on the whole still defective and generally badly kept.

As regards the domestic water supply, in Moka District the supply from Mare-aux-Vacoas, deep wells and Bois d'Ebène spring is good and that from shallow wells and superficial springs is bad.

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* Including 2 probationers at Rodrigues Island.

The greater part of Flacq District is supplied with good water by pipes from Rivière Dubois and Rivulet Jamblon. The supply from Monneron River is not so pure.

The supply of Rivière du Rempart District is generally good being derived from caves and deep wells, but that derived from rivers and Bois Rouge Canal is bad.

The supply of Pamplemousses Districts derived from deep wells and the Le Plessis and Bassin Loulou springs is good whilst that derived from rivers and canals is bad.

In Grand Port, Rivers Citron and Be-Manique afford a good supply of water and in Savanne Rivière des Anguilles and River Patate, with wells, rivers and canals constitute the principal sources of water supply.

In Black River the public fountains supply good water for drinking purposes, but the water from rivers, wells and canals are liable to pollution during heavy rains.

At Chamarel, springs and rivers afford a good supply and indigenous water-borne diseases are unknown in the locality.

Water supply is an important subject and District Boards are doing their best to provide pipe supplies wherever possible.

SANITATION.—During the year Government took over Sanitary Services at Rose Belle, Mahebourg, Curepipe and Flacq.

The disposal of faecal matter by "Engrais" was prohibited (except under existing Contracts i.e. "Roche Bois" in Port Louis and "Ebene" in Plaines Wilhems).

Clauses were inserted in all new contracts for Rural Districts that trenching must be carried out.

THE CIVIL MEDICAL STORES

The following is a summary of transactions of Medical Stores during the year 1922.

1. Cost of drugs, chemicals, instruments received and repairs to instruments, &c., was Rs. 152,682.16.
2. Value of drugs, chemicals instruments &c., issued to Government Institutions, Rs. 80,789.54.
3. Value of disinfectants, sera, vaccines, &c., issued in connection with plague and other contagious diseases, Rs. 47,356.05.
4. Sum realised by sale of medicines, vaccine and sera to private parties, and to Medical Practitioners, sale of unserviceable stores and value recovered for damage to instruments issued to institutions Rs. 1,430.44.
5. Quantity and cost of quinine issued : 21,797 oz 234 grains costing Rs. 50,354.49.

The institutions to which drugs are issued are as follows: Hospitals 12, Dispensaries 29, Charitable Institutions 10, Schools 150, Police Stations 54, Government Institutions 15.

LEGISLATION AND DEPARTMENTAL CHANGES

List of Ordinances and Regulations affecting Medical and Health Department passed during 1922.

ORDINANCES

No. 12 of 1922—Labour Law } Placing Hospitals on Estates under Medical and
„ 32 „ —Amending Labour Law } Health Department.
„ 21 „ —To amend Opium Ordinance 1913 (Prohibition of Opium smoking)
„ 25 „ —To make better provision for the destruction of Mosquitoes.

REGULATIONS

No. 8 of 1922—Modifying Diet Scale at the Lunatic Asylum
„ 238 „ —Dust Bins } providing same in Port Louis.
„ 315 „ —Pit Latrines } do. do.
„ 141 „ —Quarantine measures respecting vessels proceeding to Dependencies.
„ 105 „ —}
„ 129 „ —} Prohibition of bathing and washing in certain rivers.
„ 130 „ —}
„ 131 „ —}

DEPARTMENTAL STAFF AND CHANGES.

Director	—T. B. Gilchrist, M.D., C.M., D.P.H., F.R.F.P.S.
Assistant Director	—F. J. R. Momplé, M.B., C.M. & D.P.H., replacing Dr. Barbeau at Réduit Laboratory.
Acting Director ...	—A. C. D'Arifat, L.R.C.P., M.R.C.S.
M.O.H. Port Louis	—J. Balfour Kirk, M.B., Ch.B., D.P.H., D.T.M. & H.
M.O.H. Pl. Wilhems	—R. O. Sibley, M.D., M.R.C.S., L.R.C.P., D.P.H., D.T.M. & H.,
Sanitary Warden (N)	—A. L. Castel, M.R.C.S., L.R.C.P.
do. (S)	—A. G. Masson, M.D., Ch. B.
Port Health Officer	—F. L. Keisler, L.R.C.P., & E. L.F.P. & S., D.T.M., D.P.H.
Supt. & Govt. Analyst	—L. G. Barbeau, MB., C.M., D.P.H.

Medical Officers in charge of Hospitals

Civil Hospital ...	—F. A. Rouget, M.D. (Edinburgh)
Resident Surgeon	—G. Seneque, M.D. (Paris)
Victoria Hospital	—E. L. de Chazal, M.D. (London)
Resident M.O. ...	—P. de Chaumont, M.B., B.S. (London), L.R.C.S., M.R.C.P. (England)
Moka Hospital ...	—G. A. Leclezio, M.R.C.S. (England), L.R.C.P. (London), D.P.H. (London)
Flacq Hospital ...	—H. G. Lamberty, L.R.C.P. & S. (Edinburgh), F.L P. & S. (Glasgow)
Grand Port Hospital	—E. Portal, L.R.C.P. (Edinburgh)
Souillac Hospital	—B. A. Sinnatambou, L.R.C.P. & S. (Edinburgh), F.P. & S. (Glasgow)
Poudre D'Or Hspital	—S. Piarroux, L.R.C.P. & S. (Edinburgh), L.F.P. & S. (Glasgow), acting
Lunatic Asylum	—L. Vinson, M.D. (Paris), acting.
Long Mountain Hospl.	—M. C. H. Camal Boudou, L.R.C.P. & S.(Edinburgh), L.F.P. & S. (Glas.)

Medical Officers in charge of Dispensaries :

Port Louis.—Central Dispensary—Dr. David (acting).
Pamplemousses.—Terre Rouge, Pamplemousses—Dr. C. Camal Boudou.
Rivière du Rempart.—Le Ravin Dispensary—Dr. Piarroux.
Flacq.— Rivière Sèche—Dr. Lamberty.
Trou d'Eau Douce—Dr. A. Lesur.
Grand Port.—New Grove, L'Escalier, Plaine Magnien and Bois des Amourettes—Dr. Guérin.
Savanne.—Baie du Cap, Chemin Grenier, Rivière des Anguilles—Dr. Sinatambou.
Black River.—Petite Rivière and Case Noyale—Dr. E. Harel.
do. Bambous Dispensary.—Dr. Bour (Medical Referee, Plaines Wilhems).
Moka.—Pailles—Dr. G. Léclézio.

Indian Medical Officers

Eastern Dispensary —P. C. Sengupta.
Triolet, Grand Bay and Grand Gaube.—M. C. Roy (resigned since).
Saint Pierre and Quartier Militaire —R. C. Sengupta (resigned since).
Saint Julien Dispensary —N. C. Das (resigned since).
Civil Hospital —H. G. Austin

Ankylostomiasis Department.

D. I. Abraham

Dr. Gilchrist was confirmed as Director, Medical & Health Department, by despatch No. 339/22 as from the 15th February 1922.

Dr. Barbeau proceeded on leave on the 20.5.22 for America having been granted a Scholarship by International Health Board and was replaced by Dr. Momplé who in his turn was replaced by Dr. D'Arifat.

Dr. Chasteauneuf went on leave on 16.6.22 and died 28.3.23—duties performed by Dr. Bour.

Barkly Asylum Hospital was transferred to Candos, Quatre Bornes under the name of Victoria Hospital, with Dr. de Chazal as Medical Superintendent and Dr. de Chaumont as Resident Medical Officer.

6 Indian Medical Officers from India joined the Department specially for dispensaries' service.

1 European Nurse joined the service in September and is attached to Victoria Hospital.

Dr. Masson, Sanitary Warden, and Mr. Naz, Sanitary Engineer, went on leave in Europe. The former continued to be on leave during the whole year.

Dr. Kirk joined the service as Medical Officer of Health Port Louis in September 1922.

Dr. Sibley joined the service as Medical Officer of Health, Plaines Wilhems in December 1922.

Dr. de Robillard was appointed as Medical Referee (Curepipe Section).

Dr. Leclézio resumed duty on 1.8.22.

IMPORTANT MATTERS REQUIRING SPECIAL ATTENTION

(1) Satisfactory Rat-proof housing scheme for working classes and after that is accomplished :
(2) Closing and demolition of slum property.
(3) Adequate and pure water supply for Port Louis.
(4) Rat-proof granaries.
(5) Midwifery and Child-Welfare scheme together with proper training and supervision of midwives.
(6) Scheme for treatment of Venereal Diseases.
(7) Soil Sanitation Campaign, together with Regulations on approved plans dealing with septic tanks.
(8) Better system for notification of births and deaths.

T. B. GILCHRIST,
Director.

ANNEXURE A.

ESTIMATED POPULATION OF MAURITIUS ON 31ST DECEMBER, 1922.

Districts	General Population			Indian Population			Total Population		
	Males	Females	Total	Males	Females	Total	Males	Females	Total
Port Louis	14,998	13,723	28,721	11,646	10,606	22,252	26,644	24,329	50,973
Pamplemousses ...	3,392	3,177	6,569	16,001	14,546	30,547	19,393	17,723	37,116
Rivière du Rempart ...	2,953	2,627	5,580	13,555	12,738	26,293	16,508	15,365	31,873
Flacq	5,365	4,902	10,267	22,266	20,448	42,714	27,631	25,350	52,981
Moka	6,457	6,120	12,577	19,709	17,519	37,228	26,166	23,639	49,805
Plaines Wilhems ...	3,675	3,479	7,154	13,757	12,108	25,865	17,432	15,587	33,019
Grand Port... ...	14,424	17,314	31,738	23,306	22,159	45,465	37,730	39,473	77,203
Savanne	2,567	2,621	5,188	13,127	11,870	24,997	15,694	14,491	30,185
Black River ...	2,638	2,431	5,062	4,998	4,369	9,367	7,636	6,803	14,439
Total ...	56,469	56,397	112,866	138,365	126,363	264,728	194,834	182,760	377,594

ANNEXURE B.

STATEMENT SHOWING THE NUMBER OF PLAGUE CASES AND DEATHS IN THE COLONY DURING THE YEAR 1922.

MONTHS	Port Louis			Pamplemousses			Riv. du Rempart			Flacq			Grand Port			Savanne			Plaines Wilhems			Black River			Moka			Total		
	Cured	Died	Total	Cured	Died	Total	Cured	Died	Total	Cured	Died	Total	Cured	Died	Total	Cured	Died	Total	Cured	Died	Total	Cured	Died	Total	Cured	Died	Total	Cured	Died	Total
January	1	1	2	...	1	1	...	...	...	...	...	...	...	1	1	...	...	...	7	14	21	...	1	1	...	...	...	8	18	26
February	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...		...	3	3	...	...	...	...	...	...	...	3	3
March	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
April	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
May	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
June	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
July	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
August	3	...	3	...	...	...	...	...	...	...	...	...	...	...	...		...	...	...	...	...	...	...	...	...	...	...	3	...	3
September	1	5	6	...	...	...	...	1	1	...	...	...	...	...	...		...	...	1	...	1		...	...	...	...		2	6	8
October	...	14	14	...	...	...	...	...	...	...	...	...	...	...		...	...	...	...	...	...				...	...	...	...	14	14
November	4	17	21	...	2	2	1	...	1	...	...	...	...	...	...		...	...	...	1	1	...	...		...		...	5	20	25
December	5	14	19	...	...	...	...	...	...	...		...	...	...		...	...	...	...	...	...	...	...	...	...	...	...	5	14	19
TOTAL...	14	51	65		3	3	1	1	2		...	...	...	1	1	...		...	8	18	26	...	1	1	...	...	...	23	75	98
Percentage of deaths	...	78.5	...		100			50	...	...	...	...	...	...	...	...	...	...	...	69.2	...	...	...	...	...	...	...	...	76.5	...

ANNEXURE C.

PLAGUE

CLASSIFICATION OF CASES ACCORDING TO PLACE OF TREATMENT.

	Cured	Died	Total
Seen post mortem	...	31	31
,, in extremis	...	10	10
Treated at home	1	...	1
,, in Estate Hospitals	3	4	7
,, at Civil Hospital	...	1	1
,, at Grand River Lazaret	19	29	48
	23	75	98

RACE INCIDENCE

	Cured	Died	Total
Mauritians	8	32	40
Indians	15	36	51
Chinese	...	7	7
	23	75	98

SEX INCIDENCE

	Cured	Died	Total
Males	8	40	48
Females	15	35	50
TOTAL	23	75	98

ANNEXURE D.

AGE INCIDENCE

	Cured	Died	Total
Under 1 year	1	...	1
1 to 5 years	2	5	7
6 to 10 ,,	7	12	19
11 to 20 ,,	8	26	34
21 to 30 ,,	3	14	17
31 to 40 ,,	...	8	8
41 to 50 ,,	1	4	5
51 to 60 ,,	...	4	4
61 to 70 ,,	1	...	1
71 to 80 ,,	...	2	2
Above 80 ,,	...	...	...
TOTAL	23	75	98

Number persons inoculated with anti-plague vaccine in Port Louis	6,502
Number of vessels arriving from infected ports, fumigated and disinfected	35
Number of outgoing vessels fumigated owing to the prevalence of plague in the Island	17

NUMBER OF RODENTS CAUGHT IN PORT LOUIS AND COUNTRY DISTRICTS.

Port Louis	57,554
Black River	7,107
Plaines Wilhems	18,106
Grand Port	1,662
Savanne	674
Moka	1,993
Flacq	289
TOTAL	87,385

ANNEXURE E.

NUMBER OF RODENTS MICROSCOPICALLY EXAMINED AND THE NUMBER FOUND PLAGUE-INFECTED DURING THE YEAR 1922.

	Examined	Infected
Port Louis	23,986	237
Plaines Wilhems	79	4
Savanne	7	...
Grand Port	1	...
TOTAL	24,073	241

112 cats were found dead or killed in Port Louis, only 38 of them could be examined and were all found free from plague.

ANNEXURE F.

REPORT ON HOSPITAL WORK FOR THE YEAR 1922

HOSPITALS	Patients remaining on 31.12.21			New Admissions			Deaths			Patients remaining on 31.12.22			Number of beds	No. of patients on any date during 1922		Medical cases	Surgical cases	Number of Operations	Particular diseases causing largest number of Admissions	Particular diseases causing largest number of Deaths	Outdoor cases
	P	F	Total	P	F	Total	P	F	Total	P	F	Total		Maximum	Minimum						
Civil	27	131	158	2,889	3,793	6,682	86	296	382	45	95	140	340	332	149	4,609	2,231	834	Malaria	Tuberculosis	1,352
Port Louis Prison ...	..	5	5	...	137	137	...	1	4	...	6	6	16	9	1	112	33	13	Malaria	Malaria	1,027
Long Mountain ...		19	19	46	1,165	1,211	...	52	52	...	16	16	30	53	15	1,140	71	22	Influenza and Malaria	Dysentery and Pneumonia	969
Poudre d'Or	...	15	15	85	1,233	1,318	2	46	48	...	16	16	70	67	15	1,068	250	48	Malaria	Tuberculosis and Debility	368
Flacq	...	16	16	137	1,499	1,636	1	92	93	...	11	11	84	84	11	1,346	306	117	Influenza and Malaria	Nephritis	...
Mahebourg	2	24	26	80	1,245	1,325	1	88	89	26	1	27	102	91	24	1,148	278	190	Influenza and Malaria	Pneumonia	...
Souillac	8	32	40	824	1,035	1,859	14	62	76	8	23	31	88	103	28	1,368	581	201	Influenza	Nephritis	440
Barkly Asylum* ...	2	77	79	90	1,155	1,245	5	68	73	...	...	...	210	162	11	1,076	248	140	Influenza	Influenza	7
Victoria Hospital* ...	.	...	...	110	1,273	1,383	7	69	76	3	52	55	230	178	8	914	469	260	Malaria	Tuberculosis and Pneumonia	8
Lunatic Asylum ...	2	45	47	41	564	605	..	29	29	4	32	36	34	53	24	631	70	22	Epilepsy	Debility and Epilepsy	514
Beau Bassin Prison	...	10	10	...	480	480	...	10	10	...	12	12	32	36	4	395	95	46	Malaria	Tuberculosis	1,588
Reformatory ...	...	3	3	...	64	64	...	...	..	..	...	...	10	7	1	63	4	4	Malaria and Influenza	...	20
Moka	18	16	34	874	518	1,392	38	23	61	26	22	48	78	80	33	798	594	475	Cellutitis and Abscess	Tuberculosis	198
Total ...	59	393	452	5,176	14,161	19,337	154	839	993	112	286	398	1,324	...	...	14,668	5,230	2,372	...	...	6,491

P = Paying. F = Free. * Barkly Asylum closed and Victoria Hospital opened on the 5.7.22.

ANNEXURE G.

STATEMENT SHOWING THE NUMBER OF CATTLE SLAUGHTERED IN 1922

ABATTOIR	From January to May	From June to December	TOTAL
Port Louis	5,272	7,257	12,529
Beau Bassin-Rose Hill	1,262	1,348	2,610
Flacq	182	289	471
Pamplemousses	105	224	329
Curepipe	1,579	1,881	3,460
Black River	64	101	165
Mahebourg	636	891	1,527
Souillac	242	376	618
Moka	...	319	319
		Grand Total	22,028

REPORT OF BACTERIOLOGICAL LABORATORY

The total number of articles and specimens received at the Laboratory for examination during the year was 1,850. They may, as in previous reports, be classified under the following headings for the sake of convenience.

I.—CLINICAL WORK

The samples grouped under this head amounted to 1,513. In connection with 169 of these samples bacteriological examination involving cultural manipulations was made. The materials received for examination comprised blood, throat swabs and pieces of false membranes, sputum, pus and pathological secretions, cerebro-spinal fluid, faeces, urine, neoplastic tissue, carcases of rats &c.,

(a) *Blood*—773 samples were received. In 187 cases search was made for the malaria parasites which were found in 33 instances as follows :

Subtertian	in	11
Tertian	„	18
Quartan	„	4

There was mixed infection in two cases and Filaria Bancrofti was found in one of the samples.

Typhoid and the paratyphoids—These diseases accounted for 350 samples. Widal's agglutination test was applied to 288 of them, the reaction proving positive (in 1/30 dilutions and upwards) in 114 cases. Blood culture in Sodium Taurocholate broth was made in the case of the 62 other samples, the results being succesful in 26.

Syphilis—The Bourdet Wassermann complement reaction was made with 124 specimens received, with positive results in 35 of them.

Blood Counts—A differential leucocyte count was made on 75 samples.

Bacteriological examination—Results were obtained as under with the specimens which were cultured :

26 yielded bacillus typhosus (Eberth)
6 „ staphylococci
2 „ streptococci

(b) *Throat swabs and false membranes.*—Of such 42 samples were received. Loeffler's diphtheria organism was found in 21 cases, in association with Vincent's bacillus fusiformis in 7 instances.

(c) *Sputum.*—Examination for pneumococci or for Kock's tubercle bacilli was made in connection with 170 specimens. The former was found in 8 and the tubercle bacillus in 40 of them.

(d) *Pus and Pathological Secretions.*—72 samples were received, originating from various sources : vaginal secretions, scrapings &c. In 9 cases gonococci were found. Pneumococci, staphylococci and streptococci were identified in 2, 33 & 13 instances respectively. In 4 samples of scrapings from the mouth and tongue and finger the search for Treponema pallidum was negative.

(e) *Cerebrospinal Fluid.*—8 specimens were received and examined. Direct microscopical examination after centrifuging and culture did not lead to the detection of meningococci

(f) *Faeces.*—352 samples were submitted to examination. Amoeba histolytica was detected in 15 cases. The other parasites were seen in the following relative frequency in the course of these examinations.

Eggs of tricocephalus	in	205	samples
„ Ascaris	„	119	„
„ Ankylostomes	„	101	„
„ Trichonomas intestinalis	„	19	„
„ Anguillula Stercoralis	„	17	„
„ Blastocystis hominis	„	13	„
„ Lamblia intestinalis	„	5	„
„ Taenia Saginata	„	2	„

Pathogenic bacteria were isolated from 9 of these specimens as follows : bacillus coli communis in 6, bacillus paracoli in 1 and Flexner's bacillus in 2.

(g) *Urine*—The number of samples received was 303. Of these, 163 were submitted to the usual routine chemical examination. Detailed investigation in 31 cases resulted in the isolation of:

Bacillus coli communis...	... in 20	Bacillus coli communior	... in 2
Staphylococcus...	... „ 8	Morgan's bacillus	... „ 1

In 90 cases where microscopical examination was made, Bilharzia ova were seen in 43, Filaria embryos in 3, Trichomonas in 11 and the gonococcus in 1, instances respectively.

(h) *Neoplastic Tissue*—Eight specimens were fixed, cut and examined. They proved to be Epithelioma in 2, Scirrhous carcinoma in 2, adenoma in 1, adenomatous papilloma in 1, Saccoma in 1 and myxoma in 1, cases respectively.

(i) *Pleuritic Fluid*—Microscopical examination for Kock's tubercle bacilli of two samples proved negative.

(j) *Carcases of rats &c.*,—Eight dead rats were dissected and their organs examined. No plague infection was detected but in 4 cases Trypanosoma lewisi was found. Post mortem examination was made of three sheep. In one of them ankylostome eggs and coccidia were seen and anguillula in two. In the case of four guinea pigs likewise examined trichomonas and coccidia were found in three cases and anguillula in one.

II.—VACCINE WORK

The preparation of typhoid vaccine for prophylactic use was continued. 692 persons were vaccinated or revaccinated. T.A.B. (typhoid and paratyphoid A & B) vaccine was also prepared and issued when called for; 12 persons were vaccinated with this vaccine. Besides, a certain quantity of Influenza vaccine received from South Africa was diluted and placed in ampoules in view of use for therapeutic purposes.

Therapeutic vaccines—In addition to the above, autogenous vaccines were prepared as under for curative use:

Staphylococci vaccine	... 27	B. Coli Communior vaccine	... 2
B. Coli Communis „	... 15	Morgan's bacillus „	... 1
B. Typhosus „	... 10	Streptococcus „	... 1

III.—PUBLIC HEALTH WORK

Eighteen samples of water were examined bacteriologically. Ten were from the Mare aux Vacoas supply, four from the Grand River North West intake of the Municipal Port Louis supply (these were also chemically analysed), one was of seepage water from a cellar in Port Louis (also chemically analysed), one from the Monneron river dam and two of the hot water from a geyser at the Victoria Hospital. Bacterial count was made in the case of four samples of milk from the Government Experimental Dairy. Eight samples of water were received for chemical analysis in connection with five cases of river pollution.

The number of samples of foods, drugs and drinks received for chemical analysis was 158. They were as follows:

Wines ...	45	samples from the	Revenue Department
„ ...	12	„	Medical and Health Department
Milk ..	14	„	Judicial Authorities
„ ...	18	„	Medical and Health Department
Opium ...	7	„	Customs Department
Adulterated and Intoxicating Liquor ...	1	„	Judicial Authorities
Rum ...	3	„	Revenue Department
Rum ...	1	„	Medical and Health Department
Brandy ...	4	„	Revenue Department
Absinthe Extract ...	3	„	do.
Margarine ...	3	„	Medical and Health Department
Sardines ...	34	„	do.
Glaxo ...	1	„	do.
Lobster ...	1	„	do.
Flour ...	9	„	do.
Whisky ...	1	„	Revenue Department
Letchies ...	1	„	Medical and Health Department

IV.—MEDICO-LEGAL WORK

The number of articles of evidence, organs, substances &c., referred by the police through the Judicial Authorities during the year under report totalled 179. They were connected with the following crimes and offences:

Rape ...	97	articles in	15	cases
Murder ...	22	do.	6	do.
Manslaughter ...	15	do.	2	do.
Sodomy ...	10	do.	2	do.
Carnal connection with a female under 12 years ...	7	do.	1	do.
Bestiality ...	8	do.	2	do.
Infanticide ...	5	do.	2	do.
Attempt or murder ...	4	do.	2	do.
Poisoning ...	4	do.	1	do
Supposed poisoning ...	3	do.	1	do.
Indecent Act ...	2	do.	1	do.
Poisoning domestic animal ...	2	do.	1	do.

MISCELLANEOUS

The total amount of fees collected during the 12 months covered by this report was Rs. 6,059.50. Owing to pressure in the routine work of the establishment which greatly increased during the year, special attention could not be devoted to research work. Dr. Barbeau left on leave in May and I took charge on the 5th, of June. I would here express my thanks to Mr. Maya, the Assistant Superintendent, for the able assistance he has given me and to the other members of the Laboratory Staff for their devoted help.

During 1922, 3 pupil students were taken on to be trained in microscopic work.

F. J. R. MOMPLÉ.
Ag. Supt. Bacteriological Laboratory, Réduit.

REPORT BY M.O.H. PORT LOUIS.

I took over the duties of Medical Officer of Health, Port Louis on my arrival in the Colony on the 21st September 1922.

SCAVENGING

The condition of the town at the time of Dr. Andrew Balfour's visit must have been unique, and it is difficult to realise that such a condition of affairs should have been allowed to exist in the capital city of the island. I greatly regret that I was unable to participate in the veritable upheaval that was caused by the effort made by Dr. Gilchrist to clean it. The cleansing campaign was a complete success, and for the first time in their lives the inhabitants were able to see in their own streets and yards a condition of affairs that would be a credit to any city in the world.

An effective Scavenging Service had been organised, and in May a supply of dust bins was obtained by Government and issued to the townpeople on the cash and hire-purchase systems. The appearance of this model dust bin and the policy of the Government in enforcing the provision of a uniform type, stimulated local effort to the production of an adequate number for the needs of the town. Thanks to the ready adaptability of the citizens to the changed conditions, and to the constant Surveillance exercised by Sanitary Inspector Purvis over the work of the Scavenging Staff, it has been possible to maintain the city in the condition it was at the close of the campaign.

DISPOSAL OF NIGHT SOIL

The night soil service is still in the hands of the Roche Bois Manure Company. The service rendered by the Company has been uniformly unsatisfactory. It was controlled 4,163 times by the Sanitary Staff during the year.

No extension of the water carriage system has been made during the year.

Under present conditions, a period of drought combined with the great wastage of water in the town, invariably results in the water supply being cut off for several hours in the day. The effect of this is to throw every water closet out of action and to convert it into a horrible nuisance.

To cope with the primeval conditions existing in the extra-urban area, in November the installation of pit latrines was proposed. Trial pits were dug at Roche Bois, Vallée des Prêtres and Sainte Croix and were observed until the end of the year, pending Government Authority to carry on with the work.

WATER SUPPLY

Untreated Grand River water has been the water supply of the majority of the inhabitants of the town. The remainder derive their water from the Bathurst Canal or from the Dayot Canal. Each of these sources is bad.

Improvement of the quality of water supply is, in my opinion, the most urgent sanitary reform required here.

The number of nuisances from defective regards is still considerable, and training the population to turn off the supply of water from running taps when it is no longer required is a constant occupation of the sanitary staff.

" Prise " cocks were removed and ferrule taps were substituted in 807 regards.

HOUSING

The housing problem in Port Louis is acute. Conditions have apparently been against the efforts of private enterprise to provide newer and better housing, and practically the only attempt that has been made to relieve the congestion has been made by Government.

The Model Village at Cassis has been extended during the year and now provides accommodation for 91 families.

A further number of houses for the poorer classes has been begun at New Cut Street on the slope of Signal Mountain. The site is elevated and commands a fine view of the town. 36 Houses should be ready for occupation within the next six months.

Some of the dwellings are constructed of brick and concrete, and others of reinforced concrete alone, and consist each of two rooms and kitchen. Adequate latrine, urinal and bathroom accommodation of a communal type is provided, and the water carriage system is adopted throughout.

As soon as these buildings are completed, slum property in the most congested area of Port Louis will be closed for human habitation.

MARKETS AND ABATTOIRS

The Municipal Abattoir at Roche Bois has been undergoing reconstruction during the year and conditions there are already much improved. The work is still in hand.

The old insanitary meat carts have been replaced by a motor van and trailer. The van and trailer are fly-proof, are lined throughout with impermeable material, and are provided with hanging-hooks for the carcasses.

The Central Market in Port Louis is a disgrace to the town. That portion of it reserved for the sale of meat and fish should be demolished, and a covered market with an impermeable floor constructed in its place. The building need not be elaborate so long as it is dust—and fly-proof. Such a building would be free of the swarms of flies and the spectral dogs that haunt the place at present, and would render the process of marketing a less revolting experience than it is now.

I am indebted to the Inspector General of Police for the following information.

Dogs captured at Central Market	433
„ Plaine Verte	10
Total ...	443
Total number destroyed in lethal chamber	351

FOOD AND DRUGS

Legal power to control the quality of Food and Drugs in Port Louis is practically non-existent There are Municipal Regulations on the subject, but their scope is by no means as complete as it should be.

The milk trade in Port Louis is in as corrupt a state as it is possible to be in. The product known as fresh milk is a rarity in the town. The commonest method of sophistication that is practised is the addition of water to the milk. Producers frequently skim the milk and attempt to disguise the fact of impoverishment by the addition of water and flour or chalk, controlling the specific gravity of the resulting concoction with the lactometer. Boiled milk is frequently exposed for sale as fresh milk.

On two occasions the Director of the Medical and Health Department gave to the milk sellers of Port Louis lectures on the hygiene of milk production. A large proportion of the persons engaged in the milk trade in the town and district availed themselves of this experience.

A demonstration of the Neillsen process of milk sterilisation as practised in South Africa was also conducted for the benefit of the local dealers.

During the year 276 samples of milk were taken in Port Louis and of these, 145 or, roughly 52%, were sophisticated.

20 Milk sellers were warned that the samples taken showed a slight degree of impoverishment; 86 prosecutions were successfully entered and fines to the extent of Rs. 4,509 were inflicted upon offenders.

There are indications that Government control is having a good effect upon the chemical quantity of the milk supplied to the town and when the milk sellers begin to realise that it does not pay to attempt to sell adulterated milk, steps can be taken to minimise the dangers arising from bacterial contamination.

The following table gives a summary the results of the seizures of other food stuffs.

Seized at	Stores and Godowns	Public Markets and Sales	Disposed of by
Oatmeal	42 lbs.	...	Dumping in Refuse Cart
Sardines	4,306½ „	...	do. in sea
Ling Fish	600 „	...	do. at Roche Bois
Bombli Fish	2,750 „	...	do. do.
Snook Fish	72,000 „	...	do. do.
Cape Lobster	...	4,608 lbs.	do. in sea
Tinned Lobster	13 lbs.	...	do. do.
Tinned Salmon	39 „	...	do. do.
Condensed Milk	...	2,016 lbs.	do. do.
Tinned mushrooms	...	50 „	do. do.
Flour	13,320 lbs.	...	Animal Manure
Biscuits	12 „	...	Refuse trolley
Margarine	..	2,430 lbs.	Dumping in sea
Wine	...	505 galls.	Not yet disposed of
Beef	...	98 lbs.	Petrolized and put in refuse trolley.
Salted Pork	55 lbs. (Fined Rs. 2 and Costs)	...	do. do.

Most of the seizures were made at the request of the owners before the goods had been exposed for sale, but the salted pork was exposed for sale in a shop and a prosecution was entered against the seller.

CERTAIN COMMUNICABLE DISEASES

ENTERIC FEVER.—The following table shows the number of cases notified to the Sanitary Authority as occurring each month in Port Louis:

Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total
...	7	13	19	25	19	14	2	4	1	...	1	106

The disease assumed an epidemic character during February and the epidemic lasted until August.

The source of the infection was thought to be the water supply of the town and the public were warned through the medium of the local press of the danger of drinking unboiled water.

As regards flies it is worthy of remark that there is a remarkable absence of the common house fly in Port Louis. House flies are found in certain places such as eating houses and other places where food is prepared for sale; but they are not the universal pest that they are in some other parts of the Island. I think that a cause of this may be the clean condition that the yards of the town are maintained in, and that garbage is not allowed to accumulate for a sufficient time to allow the musca to breed out. There may be other bionomic factors involved.

PLAGUE.—During the year 69 cases of this disease were notified to the Sanitary Authority as occurring in the Port Louis district. Of these 3 were the residuum from the 1921 epidemic.

The first case of the new outbreak was notified on the 21st of August and thereafter the outbreak slowly increased in intensity until November, when the frequency rate began to diminish.

The above figures almost certainly understate the extent of the disease in the town. Certain sections of the population have such an attachment for their et *lares et penates* thay they conceal cases of plague in their midst rather than undergo the anxiety of the temporary separation from their "household goods" that detention as contacts in the lazaret entails. Such callous disregard for the safety of the community itself, and the consequences of such conduct, can only be avoided if people notify at once to the Sanitary Authority the addresses of houses which contain suspected cases of plague.

The time and place distribution of the cases showed clearly the endemic character of the disease.

The following is an analysis of the cases:

Bubonic	71%
Septicaemic	26%
Pneumonic	3%

The case mortality was 77%. The figures are too small to make the observation of much scientific value.

The remote measures were the systematic inoculation of certain classes of the community and of volunteers, and the preventive disinfection and fumigation of premises whereon infected rodents were found.

In November a special disinfection gang was sent to the Railway goods shed and all goods likely to carry plague—(infected fleas)—were loaded into special trucks and fumigated with sulphur before dispatch up country. A notice was published by the General Manager of Railways in response to a request of the Department, prohibiting the dispatch of certain classes of goods by passenger trains so that such goods could be fumigated before leaving Port Louis.

A regulation made by Dr. Gilchrist during the previous epidemic was again put into force by the Acting Director. This regulation was designed to prevent the transport of sick persons from Port Louis to the country districts by rail or road.

In November several cases appeared at close intervals in that area of the town bounded by Company's Garden, Police Barracks, Madame Street, and Labourdonnais Street.

A preventive inoculation campaign was organised for the infected area and the local medical practitioners were circularised with a view to finding out whether they would be willing to co-operate with the Medical Officer of Health in the work.

Preventive inoculations of Clinsearch anti-plague vaccine were made in 6,502 cases. It is significant that out of the 66 cases of the disease in 1922 which came to the knowledge of the Sanitary Authority only one gave a history of previous inoculation. He was a rat-catcher employed in the Department and for some reason or another had only one injection of the vaccine. He died after an illness lasting five days.

During the year 57,554 rodents were caught and examined microscopically for the presence of plague bacilli. 237 were found to be plague-infected. Of that number 45 may be considered to be the terminal cases of the 1921 epizootic. From the 12th February until the 30th July inclusive no plague infected rodents were discovered out of 25,945 examined. On the 31st July the first plague-infected rat of the present epizootic was detected and since then 191 have been recorded out of a total of 26,710 rodents trapped.

The Department has a record of the microscopical post mortem examination of mice for the year and from this record it would appear that the mice are not the first to be affected with plague so that their disappearance cannot be accounted for by the fact that they are the first victims. Further investigation on this interesting observation is required before any definite conclusions can be drawn from it.

The question of rat-proof granaries has been considered during the year, and after several alternatives schemes had been compared it was decided to recommend that Government take over the Arabian Dock Company's premises for the purpose of converting them into rat-proof grain stores. This should diminish the risk of plague being imported to the island from abroad, and might conceivably have a reducing effect on the numbers of the local rat population.

MALARIA.—Practically nothing is actually known about the prevalence of malaria in Port Louis. A great deal has been surmised, but precise information is conspicuous by its absence, the only scientific information available on the subject being the record of the blood examination of school children.

There is no doubt that malaria exists in the town and district, but the extent of the disease is not know and information regarding the nature of the parasites has not yet been made available.

The Malarial Authority has been responsible for the upkeep of the anti-malarial works in the District for the greater part of the year.

The Department of the Medical Officer of Health, Port Louis, has reclaimed certain swampy lands in the intra-urban area, namely about 17,000 square yards of marsh land at Les Salines and areas of about 1,000 sq. yards at corner of Fanfaron Mars and Abattoir Road.

Swine are one of the most persistent enemies of the Sanitary Authority which is undertaking drainage anti-malarial work. They root in the drains and break them up or destroy the channel. 151 stray swine were shot by the Police in the Port Louis district during the year.

Ordinance No. 25 of 1922, "To make better provision for the destruction of mosquitoes," was published on August 5th, and, based on the powers granted to the Sanitary Authority by this Ordinance, a systematic plan of campaign was evolved, which should undoubtedly have some effect,.

combined with other measures, in causing a reduction in the incidence of malaria in the town and district. Unfortunately, owing to the lack of precise statistical data for the past its effects cannot be shown graphically but it is hoped that by systematic examination of the blood of various sections of the population better information will be available in the future.

Other communicable diseases are embodied in the general report of the Honourable the Director.

GENERAL SANITARY WORK

From the attached tables it will be observed that : 24,281 inspections of private premises were made by the Sanitary Staff during the year, 3,726 Orders and Notices dealing with nuisances were served, of which 2,817 were complied with.

54 cases were prosecuted and Rs. 591.25 inflicted as fines.

Under the existing food laws 850 inspections were made.

Government premises were inspected 2,780 times and information relating to nuisances referable to Government Department for action was transmitted to the respective departments on 1,603 occasions.

My thanks are due to the Honourable the Director of the Medical & Health Department for assistance in compiling this report, which deals largely with his work; to Sanitary Inspector A. A. Purvis, Cert San. Association (Scot.) for much valuable assistance during my initiation into the work, and to Sanitary Inspector C. E. Young, A.R.S.I., for assistance of a similar type in relation to his Department.

Dr. A. C. D'Arifat, Assistant Director, during the absence on sick leave of the Director, was of material assistance and Drs. Keisler and Castel have given me the benefit of their intimate knowledge of the conditions peculiar to the town and district.

The Sanitary Inspectors and Guards and the junior staff of the Department have co-operated loyally with me during the short period which this report covers.

J. BALFOUR KIRK,
M.O.H. Port Louis.

YEARLY RETURN OF INSPECTIONS MADE AND ACTION TAKEN BY THE SANITARY STAFF OF M.O.H. PORT LOUIS

FROM JANUARY TO DECEMBER 1922.

No. of Visits paid to :	
Private premises	24,281
Lodging Houses	...
Shops	652
Markets	109
Bake-houses	71
Slaughter Houses	5
Butchers' Shops	14
Special Enquiries in regard to Sanitary matters &c.,	
Control of cremations	263
No. of stables, pigsties, cowsheds inspected	511
Government Establishments inspected on how many occasions?	
Public latrines, gratuitous latrines, noxious factories, camps of labourers, docks, water courses, cemeteries, sea-shores	2,780
No. of visits paid to waste lands in town and District of Port Louis	1,015
Disinfection of private premises	23
Attendance of Sanitary Officers at Law Courts	19
No. of Dhobies' Workshops visited	163
do. Lighters in Harbour	263
Nuisances of private premises :—	
Notices and requests issued	3,726
No. complied with	2,817
No. not complied with	909
Contraventions of Sanitary enactments detected :	438
Cases prosecuted	54
Amount of fines	Rs. 591.25
No. of certificates transmitted to the Municipality (Ordinance 23 of 1903) for abatement of public nuisances existing in the town of Port Louis.	3,275
No. of orders issued by Sanitary Authority for improvements and removal of nuisances as contemplated in Ordinance 21 of 1900.	57
No. complied with	23
Nuisances bearing on Public Health referred to Govt., for action :	
No. referred to Public Works Dept.	107
do. Railway	42
do. Forest	9
do. War	11
do. Agriculture	3
do. Sanitary Engineer	394
do. Drainage	1,037
Application of Service Destruction Ordinance.	
No. of pigs shot by Police in Extra Urban Area	151

LIST OF WORK CARRIED OUT BY THE SANITARY ENGINEER

From 1st January to December 31st, 1922.

1. Abated 837 Municipal Nuisances of which 437 from 1.6.22 to 31.12.22.
2. Extensive repairs to the Medical and Health buildings in Port Louis.
3. Construction of servants' quarters, Civil Hospital.
4. Supervised work carried out at Central Market.
5. Improvements made to the latrines at Beyts Square and Theatre.
6. Rethatching of huts Curepipe Sanitation Compound.
7. Making Section for Channel at Pointe aux Sables.

SCHOOL MEDICAL EXAMINATIONS IN PORT LOUIS.

School Medical Inspection in Port Louis was started during the 2nd half-year. The following schools were inspected :

1. La Paix Street Aided School.
2. Roche Bois Government School.
3. Père Laval Nicolay Road Aided School.
4. Grand River North West Government School.
5. Mahomedan, Corderie Street Aided.
6. Ste. Croix Aided School
7. Vallée des Prêtres Government School.
8. Arsenal Street Aided School.
9. Notre Dame de Lorette Aided School.
10. Signal Mountain Aided School.

The number of pupils examined amounted to 1,189 and the principal diseases notified were :

Pediculosis	101
Scabies	34
Skin diseases	12
Defective eyesight	10
Ear troubles	10
Tonsils and adenoids	6
Bad teeth	148
Rickets	2
Malaria	237
Ankylostomiasis	439
Schistosomiasis	16
Other worm infections	154

The Head Teachers have been warned that children suffering from Pediculosis, Scabies and skin diseases are not to attend school until they are perfectly cured. Those who suffer from defective eyesight (myopia generally) are to be placed in the front seat and in a room where lighting is not defective.

The number of pupils put down as suffering from ankylostomiasis is certainly great (36.9%). They no doubt suffer from anaemia without oedema of the feet or ankles. This anaemic condition may be attributed to the following causes :—

(a) Malaria—237 pupils were found with enlargement of the spleen.
(b) Ankylostomiasis.
(c) Defective general development.
(d) Presence of worms in the intestines.
(e) Poverty.

The only way of establishing a correct diagnosis would be to have the stools of all children regularly examined twice a year. Those who suffer from the hookworm disease could be treated at once and those who do not could be sent either to hospital or to the nearest dispensary according to the gravity of their aliments. Pupils who are anaemic and show presence of worms in the intestines could be sent to the dispensary for treatment.

I have received a number of books with counterfoils, towards the end of November last, to be used in connection with pupils found to be suffering from any of the diseases above mentioned, but as I had just finished my inspections and that the schools were on the eve of closing for Christmas holidays, I was obliged to defer their distribution till January this year.

I have started my inspections since the 19th instant and the books have all nearly been distributed.

237 Children were found suffering from enlargement of the spleen, giving a spleen rate of 19.9%. The figure for the first half year was 21.3%. The decrease is very small. The average spleen is 2.01 as against 2.02 for the first half year.

The following remarks call for attention :—

Water supply.—The water supply is defective. The water is obtained either from the Grand River North West Reservoir or Bathurst Canal. Those waters, which are far from being pure, are given to the pupils direct from the taps, no filter is used in any of the schools.

Buildings.—The buildings are, as a rule, former private residences converted into schools They do not always answer the purpose for which they are used.

Accommodation.—This is inadequate in the great majority of the schools. The pupils are often massed together in a room far too small for the number of occupants.

Ventilation.—The number of windows and doors are as a rule sufficient, but as some of them are often kept closed on account of draughts, wind or sun, ventilation and lighting are in that way interfered with.

Desks.—The desks and seats are of the ancient type, tending to the malformation of the spine and chest and their arrangement as regards light are, in many instances, defective.

Latrine System.—This, except where drainage is provided, is unsatisfactory. The buildings, in the majority of cases, are old and require early attention in the way of repair.

F. L. KEISLER